



A Marshall Cavendish Collection

EVERY FORTNIGHT

QUEST

ADVENTURES IN THE WORLD OF SCIENCE

MONEY

15

**GOLDEN
NUGGET
GAMBLING HALL**



PROJECTS
**GIANT POSTER:
THE WEALTH OF NATIONS**

FACT FILES ON:

- ▶ Foiling the forgers
- ▶ Turning alloys into coins
- ▶ The commodities market
- ▶ Plastic money
- ▶ Inside the Stock Exchange
- ▶ Oil – black gold
- ▶ The latest slot machines

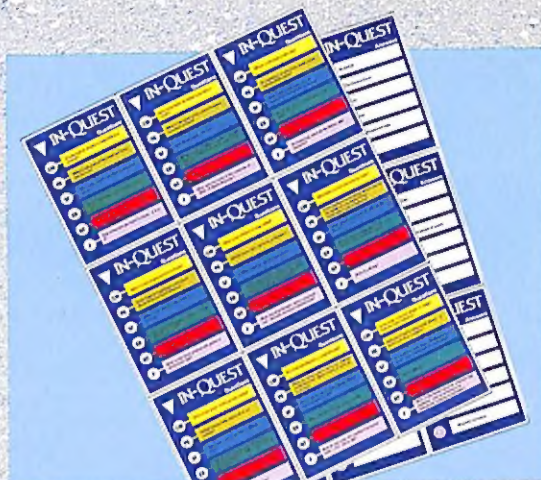
MORE Q & A CARDS FOR YOUR IN-QUEST GAME

UK £1.99 IRL£2.25 Aust \$4.95 NZ \$5.95 (inc. GST) Malaysia \$7.95 Sing \$5.95 Malta Lm1.75 

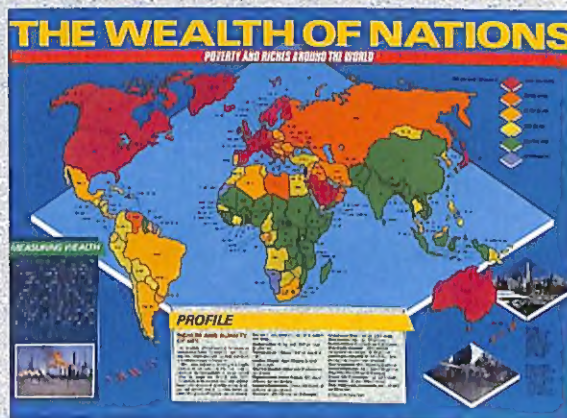
INSIDE THIS PACK

FACT FILES

- Making banknotes from jeans ► Gold and silver
- Trading in coffee and cocoa
- Cash dispensers ► Stocks and shares ► Minting coins



In-Quest 108 more questions for your game



POSTER

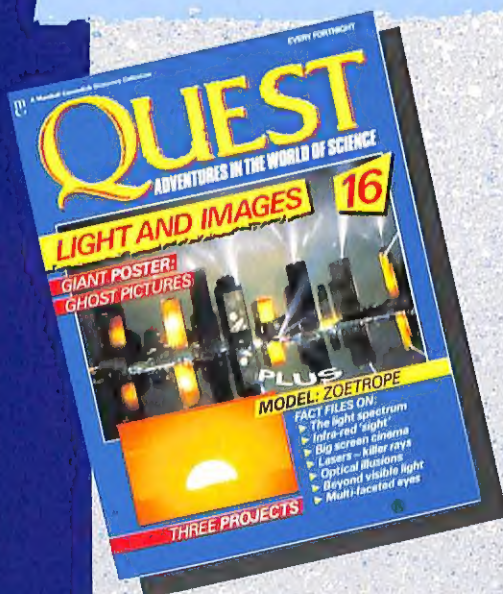
The Wealth of Nations

PROJECTS

- Make an abacus
- Play a fairground game

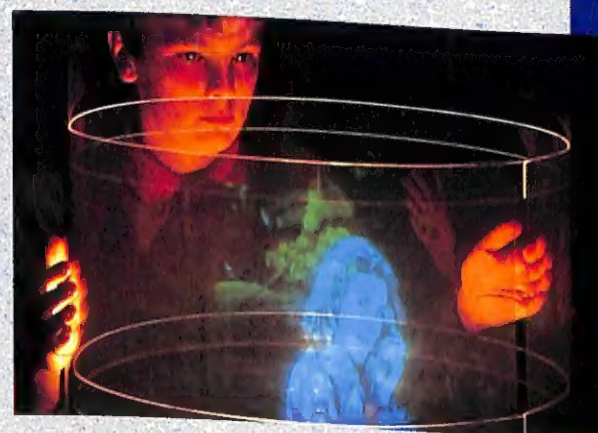


COMING IN QUEST 16 LIGHT AND IMAGES



FACT FILES INCLUDE:

- Lasers
- Film formats
- Microimages
- Pictures from Space
- Optical illusions
- Physics of light



POSTER Holograms

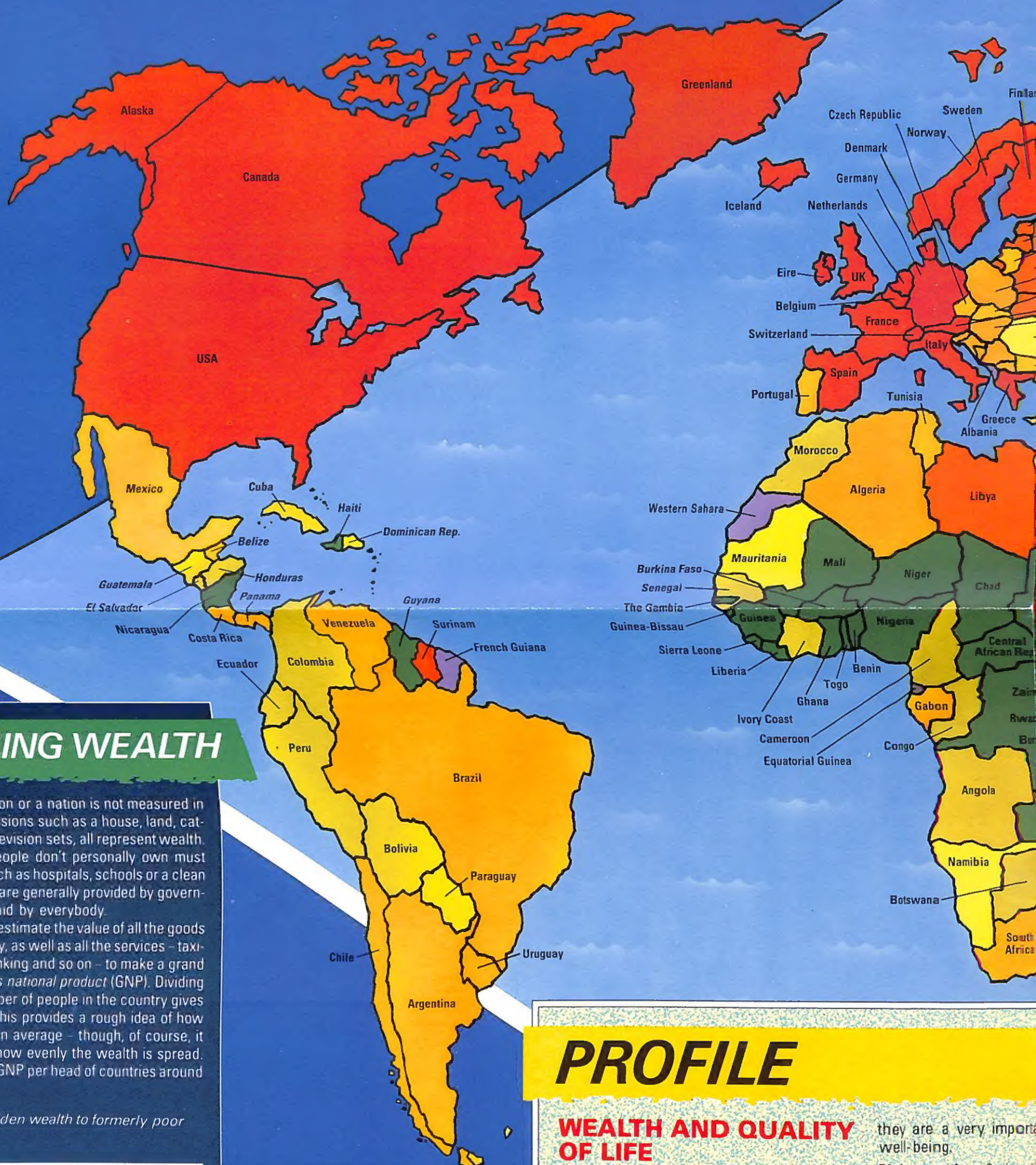
MODEL
Zootrope

ISSN 1350-3766



THE WEALTH

POVERTY AND RICHES



MEASURING WEALTH

The wealth of a person or a nation is not measured in money alone. Possessions such as a house, land, cattle, cars, books or television sets, all represent wealth. Some things that people don't personally own must also be counted – such as hospitals, schools or a clean water supply, which are generally provided by governments from taxes paid by everybody.

Economists try to estimate the value of all the goods produced in a country, as well as all the services – taxi-driving, teaching, banking and so on – to make a grand total called the *gross national product* (GNP). Dividing this total by the number of people in the country gives the GNP per head. This provides a rough idea of how well-off people are on average – though, of course, it says nothing about how evenly the wealth is spread. This map shows the GNP per head of countries around the world.

Oil has brought sudden wealth to formerly poor countries.



PROFILE

WEALTH AND QUALITY OF LIFE

The 'indicators' of wealth shown here must be treated with caution. For example, in poor countries few people own cars, but taxis and trains are common means of transport.

Also, these indicators do not give a simple measure of the *quality* of life. The richer a country is, the more pollution, crime and mental illness its people are likely to suffer from. Increasingly, in the advanced countries, children leave home as soon as possible, so that in old age their parents have to look after themselves more. Though such things are hard to measure,

they are a very important part of well-being.

Richest nation: Switzerland (\$33,510 (1991))

Poorest nation: Ethiopia (1991)

Longest lifespan (1991): (female), 76 years (male)

Shortest lifespan (1991): (female), 44 years (male)

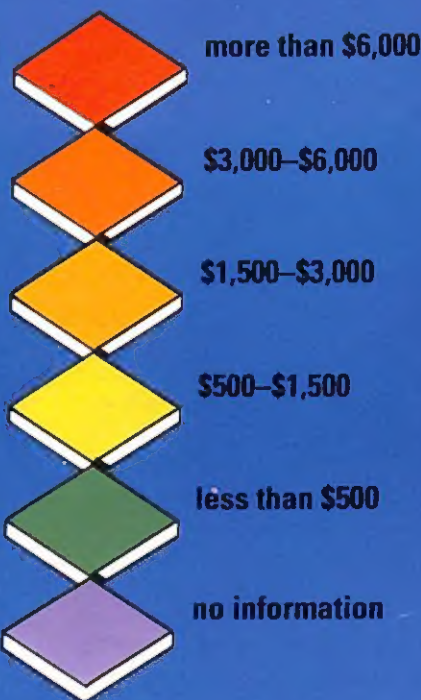
Highest calorie intake: daily average requirement

Lowest calorie intake: (73% of daily average requirement)

Most cars: USA (576 cars per 1,000 people)

QUEST

AROUND THE WORLD



Fewest cars: Bangladesh (1 car per 2,670 people).
Most doctors: Italy (1 per 225 people).
Fewest doctors: Chad (1 per 47,640 people).
Most highly educated people: USA (over 5,000 college-level students per 100,000 people).
Least highly educated people: Mali (24% primary-age children at school).
Most telephones: USA 2,090 per 1,000 people.
Fewest telephones: Zaire (1 per 1026 people).
Most TVs: USA (860 per 1,000 people).
Fewest TVs: Cameroon (1 per 2,450 people).
Most videos: UK (over 50% of homes).
Most credit cards, bank cards, etc: USA (350 per 100 adults).

All figures are approximate.



Shanty dwellers
on the Amazon use
its untreated
water for washing
and drinking. The
nearest doctor
may be hundreds
of kilometres away.

DATAQUEST

BUILDINGS & CONSTRUCTIONS: GREAT 20TH CENTURY EXAMPLES

Building	Country	City	Architect(s)	Year
Pompidou Centre	France	Paris	Renzo Piano, Richard Rodgers	1977
National Gymnasium	Japan	Tokyo	Kenzo Tange	1964
Liverpool Cathedral	UK	Liverpool	Sir Frederick Gibberd	1967
National Theatre	UK	London	Sir Denys Lasdun	1976
TWA Terminus (Kennedy airport)	USA	New York	Saarin	1962
Nakagin Capsule Bldg	Japan	Tokyo	Kisho Kurokawa	1964
Daily Express Bldg	UK	London	Ellis, Clark and Atkinson with Owen Williams	1933
Royal Festival Hall	UK	London	R.H. Matthew, J.L. Martin and LCC architect's Dept	1951
Solomon R Guggenheim Museum	USA	New York	Frank Lloyd Wright	1959
University of Sussex	UK	nr Brighton	Sir Basil Spence	1964
Lever House	USA	New York	Skidmore, Owings and Merrill	1952
Coventry Cathedral	UK	Coventry	Sir Basil Spence	1962
Natwest Building/Tower	UK	London	R. Seifert	1981
Bauhaus Buildings	Germany	Dessau	Gropius	1926
Philharmonic Hall	Germany	Berlin	Scharoun	1963
Olympic Stadium	Germany	Munich	Otto	1972
Chrysler Building	USA	New York	W. Van Alen	1930
Villa Savoye	France	Poissy	Le Corbusier	1931
Empire State Building	USA	New York	Shreve, Lamb and Harmon	1931
Sydney Opera House	Australia	Sydney	Jorn Utzon	1973
Pentagon	USA	Arlington	US Army	1943
Sears Tower	USA	Chicago	Skidmore, Owings and Merrill	1974

BRAIN POWER: PHOBIAS

Photophobia	Fear of light	Acrophobia	Fear of heights
Hydrophobia	Fear of water	Noctiphobia	Fear of night
Claustrophobia	Fear of confined spaces	Categelophobia	Fear of ridicule
Agorophobia	Fear of open spaces	Ophthalmophobia	Fear of being stared at
Arachnaphobia	Fear of spiders	Xenophobia	Fear of foreigners
Telefonophobia	Fear of telephones	Triskaidekaphobia	Fear of the number 13
Bibliophobia	Fear of books	Ergophobia	Fear of work
Ailurophobia	Fear of cats	Linonophobia	Fear of string

MONEY: CURRENCIES OF THE WORLD

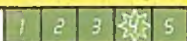
Country	Currency		
Argentina	Austral	Kuwait	Kuwait Dinar
Australia	Australian Dollar	Lebanon	Lebanese Pound
Bahamas	Bahamian Dollar	Luxembourg	Luxembourg Franc
Bahrain	Bahraini Dinar	Malaysia	Ringgit
Bangladesh	Taka	Morocco	Dirham
Barbados	Barbados Dollar	Netherlands	Guilder
Brazil	Cruzado	Nigeria	Naira
Canada	Canadian Dollar	Pakistan	Rupee
China	Yuan	Panama	Balboa
Colombia	Colombian Peso	Paraguay	Guarani
Cyprus	Cyprus Pound	Philippines	Peso
Egypt	Egyptian Pound	Portugal	Escudo (100 centavos = 1 escudo)
France	French Franc (100 centimes = 1 franc)	Saudi Arabia	Saudi Riyal
Germany	Deutsche Mark (100 Pfennig = 1 DM)	Spain	Peseta
Ghana	Cedi	Sri Lanka	Rupee
Hong Kong	Hong Kong Dollar	Sudan	Pound
India	Rupee (100 paise = 1 rupee)	Switzerland	Swiss Franc
Indonesia	Rupiah	Thailand	Baht
Italy	Lira	Turkey	Turkish Lira
Jamaica	Jamaican Dollar	United Kingdom	Pound Sterling (100 pence = £1)
Japan	Yen	Uruguay	New Peso
Jordan	Dinar	USA	US Dollar (10 cents = 1 dime; 25 cents = 1 quarter; 100 cents = \$1)
Kenya	Kenyan Shilling	USSR	Ruble (100 kopecks = 1 ruble)
Korea, South	Won	Venezuela	Bolivar (100 centimos = 1 bolivar)
		Zambia	Kwacha



PROJECTS MONEY

- How can you make a simple calculator for adding and subtracting even the largest numbers?
- It is difficult to win at the fairground roll-a-penny game. Make one and find out why.

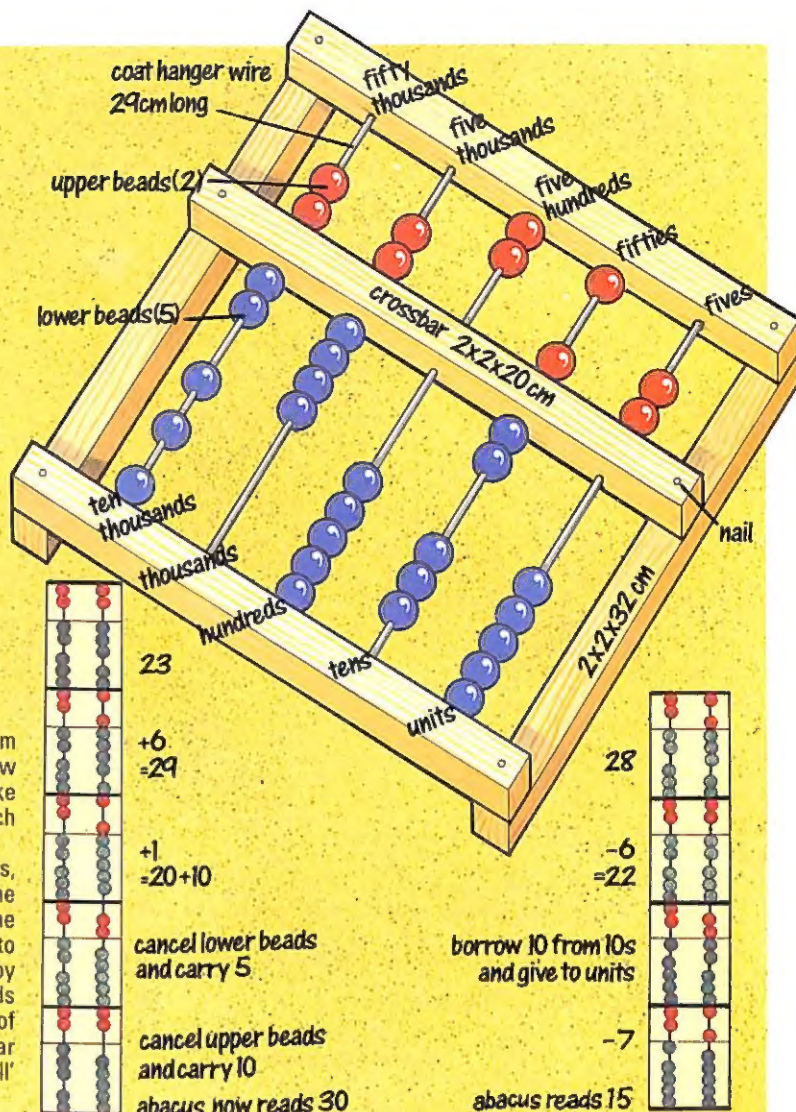
MAKE AN ABACUS



Some wood, wire, beads and nails are all you need to make an abacus. This primitive calculator invented thousands of years ago is still used today in China.

Buy 35 identical beads with holes large enough for them to be threaded on coat-hanger wire. Use a junior hacksaw to cut five straight lengths, each long enough to take about 12 beads (although only seven will be put on each wire) then cut and assemble the frame as shown.

The columns of beads on the wires represent units, tens, hundreds and so on. Counting is done by pushing the beads against the crossbar. The beads above the crossbar each count as five and beads below it one to five. So the number seven, for example, is represented by sliding one of the top beads and two of the lower beads towards the crossbar. On the right is an example of addition using just the first two columns and on the far right an example of subtraction. Note how the 'full' columns are 'cancelled'.

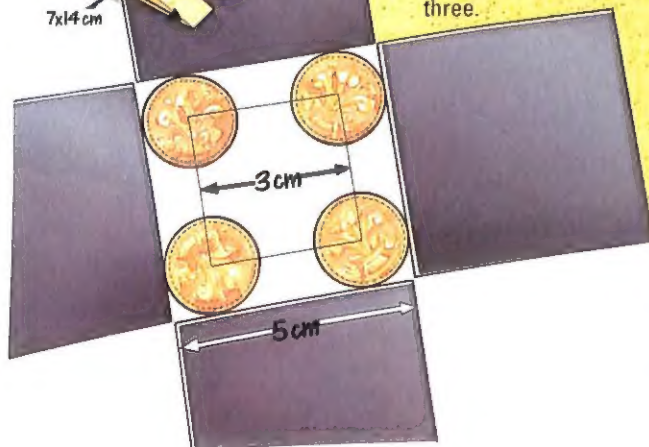
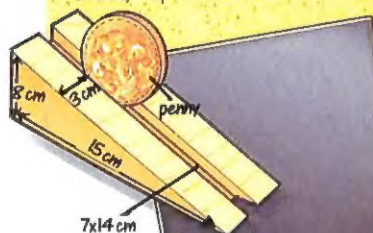


ROLL A COIN



In this fairground game, you win if your penny does not fall on any lines on a pattern of squares. Make a chute, draw 5 cm squares on a sheet of paper and try.

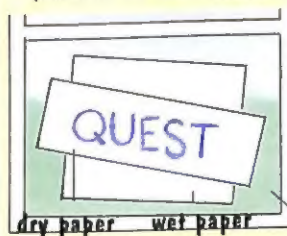
To see why winning is difficult place the penny in the corner of one of the squares and draw around it. Mark the centre with a dot, repeat in the other corners of the square then join the dots to form a small square. Your chance of winning is the area of the small square divided by that of the large. In this example, $9/25 = 0.36$, or 36 per cent - that is one in three.



WATERMARKS



You need a sinkful of water and 2 sheets of good quality, non-shiny, writing paper and a pencil. Place one sheet in the sink and soak for 5 minutes. Then, press it on to a window.



Place the dry sheet on the wet sheet and draw your design on it. Remove the dry sheet and you will see a watermark on the wet sheet.

PROJECT INFORMATION

Each **QUEST** project has its own difficulty rating: 1 very simple, 2 simple, 3 intermediate, 4 advanced, 5 complicated.



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Bangladesh	Taka	Morocco	Dirham
Barbados	Barbados Dollar	Netherlands	Guilder
Brazil	Cruzado	Nigeria	Naira
Canada	Canadian Dollar	Pakistan	Rupee
China	Yuan	Panama	Balboa
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Ghana	Cedi	Sri Lanka	Rupee
Hong Kong	Hong Kong Dollar	Sudan	Pound
India	Rupee (100 paise = 1 rupee)	Switzerland	Swiss Franc
Indonesia	Rupiah	Thailand	Baht
Italy	Lira	Turkey	Turkish Lira
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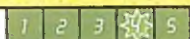


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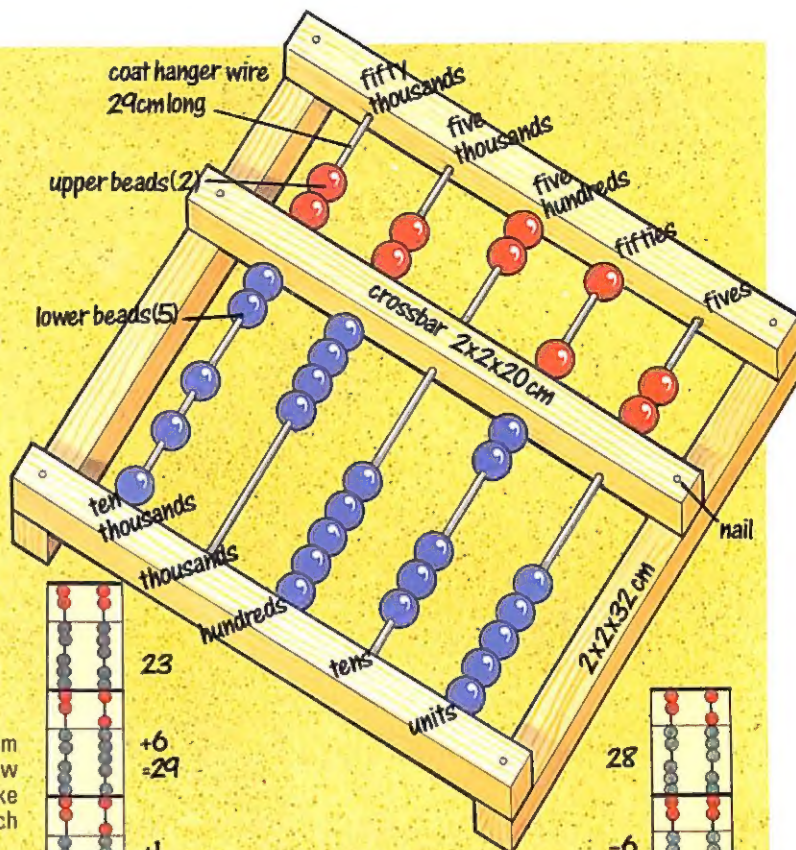
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23

+6

=29

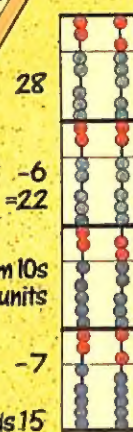
+1

=20+10

cancel lower beads and carry 5

cancel upper beads and carry 10

abacus now reads 30



28

-6

=22

borrow 10 from 10s and give to units

-7

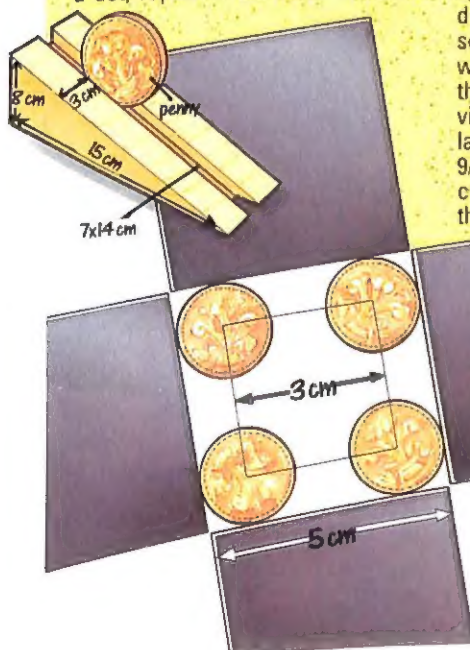
abacus reads 15

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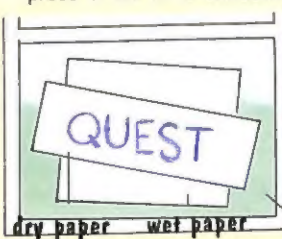
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